

II. THE RESTRICTION REQUIREMENT IS IMPROPER UNDER MPEP §§ 802 AND 806 AND SHOULD BE WITHDRAWN AS THE EXAMINER HAS NOT ESTABLISHED AN APPROPRIATE BASIS FOR RESTRICTION.

The Applicants traverse the restriction requirement for the reasons set forth below. Under 35 U.S.C. §121 and MPEP §§802 and 806, restriction is proper if two or more independent and distinct inventions are claimed in a single application. Independent means that there is no disclosed relationship between the two or more subjects disclosed, such as being unconnected in design, operation or effect. MPEP §802.01. Distinct means that the two or more subjects as disclosed are related but are capable of separate manufacture, use or sale as claimed. MPEP §802.01. Stated another way, the inventions are distinct if either or both of the following can be shown: (1) that the process, as claimed, can be used to make other and materially different products; or (2) that the product, as claimed, can be made by another and materially different process (MPEP §806.05(f)). Based on the Examiner's reason for restriction and subsequent characterization of the same, distinction as required by MPEP §806.05(f) is not satisfied. Consequently, the instant restriction requirement should be withdrawn.

On pages 2 and 3 of the Restriction Requirement, the Examiner states that "...the product as claimed can be made by a materially different process such as milling out the package substrate, such as a wafer, to form a directly attached first semiconductor die on the package substrate..." The Applicants were unclear as to what the Examiner meant by "...milling out the package substrate, such as a wafer..." as no wafer is recited or defined in the pending claims. During the June 27, 2002 teleconference, the Examiner characterized the aforementioned description by stating "...the substrate is etched, then you cut out the etched portions. The remainder after cutting out is the semiconductor die on the substrate..." The Examiner further stated that "...if you disagree with the reasons stated therein, please provide your arguments in the reply..." Based on the characterization provided by the Examiner, performing the process advanced by the Examiner does not read on or produce the structure as claimed.

As recited in each of the independent claims 1, 15 and 43, the structure of the present invention, includes among other things, an unpackaged die and a packaged memory or die, mounted or otherwise attached to a first side of a substrate. Thus, the present invention is

directed to a structure including at least two components, each having their own die, as being attached or otherwise mounted to a substrate, for example, a printed circuit board. Such claimed structure cannot be provided by the allegedly different process as recited and characterized by the Examiner as "...milling out the package substrate, such as a wafer, to form a directly attached first semiconductor die on the packaged substrate..." does not define the claimed structure and, in fact, results in a different structure. More specifically, performing the method advanced by the Examiner results in a semiconductor die being formed on a wafer. Mounting, or otherwise attaching, the semiconductor die and a packaged die on a separate substrate is not performed in the method advanced by Examiner. Accordingly, the resulting structure is completely different from the structure defined, for example, in claim 1 as the semiconductor die that is mounted on a first surface of a substrate includes its own die that is not formed of the substrate upon which the die is mounted or otherwise attached. Thus, at least for the reasons set forth above, the process advanced by the Examiner does not result in the claimed invention. Consequently, the Applicants submit that the Examiner has not met her burden of establishing that the structure defined in the pending claims can be produced by a materially different process.

In addition, as the pending method claims (e.g. claims 27 and 55) include limitations directed to mounting or otherwise attaching a semiconductor or unpackaged die to a first surface of a substrate which, as described above, is independent and separate from the packaged die attached to the substrate, the method claims are directly related to the claimed structure of the instant invention. As the claims that recite the method and structure of the instant invention are related and not distinct, the Examiner will not be seriously burdened by examining the claims directed to the method for producing and the structure or device produced. Consequently, the Applicants respectfully submit that the instant restriction requirement in this case is improper and requests that the Restriction Requirement be withdrawn.

III. THE SPECIES ELECTION REQUIREMENT IS IMPROPER AND SHOULD BE WITHDRAWN AS THERE IS A GENERIC CLAIM WHICH ENCOMPASSES THE BASE STRUCTURE AS DISCLOSED IN THE INSTANT APPLICATION.

On page 3 of the Restriction Requirement, the Examiner states that "...this application contains claims directed to the following patentably distinct species of the claimed invention:

- (i) Species I depicted in FIG. 5.
- (ii) Species II depicted in FIG. 6.
- (iii) Species III depicted in FIG. 9.

The Examiner has required the Applicants to elect a single disclosed species for prosecution on the merits by asserting that there are currently no generic claims in the application. The Applicants respectfully traverses the species election requirement for the reasons set forth below. First, the inappropriateness of the Restriction Requirement as discussed in greater detail above in Section II is equally applicable to the species election requirement and is incorporated fully herein. Accordingly, as the Restriction Requirement is improper, the subsequent request for election of a species is also improper as it is based upon an improper Restriction Requirement. Second, the Applicants submit that the species election requirement is improper under MPEP §806.04(e)-(g) as a generic claim which defines the base structure of the invention as illustrated in FIGs. 5, 6 and 9 is pending in the instant application.

The Examiner's attention is directed to, for example, claim 43 which is directed to a multiple-die module including, among other things:

"...a substrate having a first surface and a second surface;
an unpackaged semiconductor die mounted to the first surface of the substrate...; and
a packaged semiconductor die mounted on the first surface of the substrate..."

In an exemplary embodiment, the substrate corresponds to element 140; the unpackaged semiconductor die corresponds to element 110 and the packaged semiconductor die corresponds to element 120 and 130. As illustrated in FIGs. 5, 6 and 9, each of the aforementioned elements is present within the figures. The additional features for example the heat sink 150 in FIG. 6 and the shim 190 illustrated in FIG. 9 do not take away from the fact that each of the aforementioned elements are part of the base structure as illustrated in the corresponding figures. Thus, as at

least one of the apparatus claims defines a base structure which is illustrated in FIGs. 5, 6 and 9, the Applicants submit that at least one generic claim is present in the instant application which reads on the illustrations provided therein. Thus, the species election requirement is improper and should be withdrawn. Consequently, reconsideration of the species election requirement is respectfully requested.


In view of the above remarks, reconsideration of the Restriction Requirement and the subsequent species election requirement is respectfully requested.

The Commissioner is hereby authorized to charge any underpayment or credit any overpayment to Deposit Account No. 50-0441 for any payment in connection with this communication, including any fees for extension of time, which may be required. The Examiner is invited to call the undersigned if such action might expedite the prosecution of this application.

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